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Factors Predicting Crisis Counselor Referrals to Other Crisis Counseling, Disaster Relief, and Psychological Services: A Cross-Site Analysis of Post-Katrina Programs

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Abstract An important aspect of crisis counseling is linking survivors with services for their unmet needs. We examined determinants of referrals for disaster relief, additional crisis counseling, and psychological services in 703,000 crisis counseling encounters 3–18 months after Hurricane Katrina. Referrals for disaster relief were predicted by clients' losses, age (adults rather than children), and urbanicity. Referrals for additional counseling and psychological services were predicted by urbanicity, losses and trauma exposure, prior trauma, and preexisting mental health problems. Counseling and psychological referrals declined over time despite continuing mental health needs. Results confirm large urban–rural disparities in access to services.

Keywords Disaster mental health services · Hurricane Katrina

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Introduction

Crisis Counseling Programs are funded by the Federal Emergency Management Agency (FEMA) and administered by the Substance Abuse and Mental Health Services Administration (SAMSHA). These programs are designed to attend to the short-term mental health needs within disaster affected communities (Flynn 1994). Crisis counseling is based on the principles of crisis intervention (Caplan 1964) and employs active listening strategies to support and educate individuals who are distressed, and promote their use of positive coping (Gibson et al. 2006).

An additional function of crisis counseling is linking survivors with other community resources that can help address their unmet needs. However, there has as yet been little empirical examination of this referral process in crisis counseling.

Hurricane Katrina struck the Gulf Coast of the US in 2005 causing widespread damage due to wind, water, and failures in the levees in New Orleans. According to a study of the living conditions, access to basic services, and physical and mental health status of residents from the metropolitan area of New Orleans conducted by the Centers for Disease Control 2 months later, less than 25% of housing units had electricity or water, over 40% lacked telephone services, nearly 60% of households had one or more family members with a chronic health condition, and nearly half of adults exhibited emotional distress (CDC 2006). To address these needs of hurricane survivors across this region, crisis counseling programs (CCPs) were implemented in 19 states to provide services to federally declared disaster areas and states receiving evacuees (see Norris and Rosen 2009). Later epidemiological studies of Katrina survivors confirmed high rates of continuing mental health problems (Galea et al. 2007; Kessler et al. 2008).

Crisis counseling programs use proactive community outreach to locate individuals in the affected community (see Norris and Belamy 2009). Once survivors have been engaged, crisis counselors provide two levels of intervention (Gibson et al. 2006). First, they provide psychoeducation and brief counseling to provide support, normalize acute stress responses to the disaster, promote positive coping, and encourage use of natural sources of social support. Second, they identify and refer individuals who require services to meet instrumental needs (such as food, housing, employment, or financial assistance), additional supportive counseling, or more intensive psychological interventions. The importance of referral was demonstrated by analyses of aggregate county-level data from crisis counseling programs after Hurricane Katrina which showed that sites that provided more psychological referrals were seen as more beneficial by their clients (see Norris et al. 2009).

Referral involves several steps. First the counselor must identify and assess whether the individual has unmet needs. Next, the counselor must determine whether the individual could potentially benefit from a referral. Third, the counselor must be aware of available services that can address the client's needs. The final step involves encouraging the client to accept the referral and eliciting a commitment to follow through with accessing the services.

Two studies conducted after the September 11 attacks suggest that individuals' with greater mental health needs were more likely to receive and to accept referrals for mental health treatment. Covell et al. (2006) used data from Project Liberty counselor logs to identify predictors of referral to mental health treatment among recipients of crisis counseling. Referrals were primarily predicted by counselors' perceptions of client problems ("event reactions") and by a categorical index reflecting trauma exposure, loss, and preexisting problems. Referrals did not differ by gender, race or ethnicity, but fewer children than adults received mental health referrals. Mental health referrals declined during the first year after the attacks and increased again for individuals seen for the first time more than 2 years after the attacks. Jayasinghe et al. (2006) found that public utility workers screened after the 9/11 attacks were more likely to accept a treatment referral if they had more severe symptoms or previous mental health treatment.

Although prior studies have examined client-level predictors of mental health referrals after disaster, there has been less attention to setting or program factors. We are also not aware of any prior research examining referrals for instrumental assistance after disasters. The availability of detailed and consistent encounter-level data across different sites responding to Hurricane Katrina provided a unique opportunity to examine the referral process in crisis counseling. Our analyses were guided by the Behavioral Model of Health Services Use (Anderson 1995), which examines service use as a function of client needs, factors predisposing factors clients to want to use services, and factors enabling access to services. Although the Anderson model has traditionally focused on client *help-seeking*, we extended this model to focus on counselor *help-offering*, i.e., likelihood of making a referral.

Help-offering should ideally be driven by *client need.* For the present study, we used clients' disaster-related losses and exposure to potential trauma as indicators of potential need for services. *Predisposing client characteristics* might also influence counselors' likelihood of making a referral. Prior trauma exposure and preexisting mental disorders have been associated with poorer adjustment after disasters (Norris et al. 2002). Research in non-disaster contexts has shown that client race may influence helpers' clinical decision-making (Smedlye et al. 2003), and some studies have found that people of color were less likely than Caucasians to receive mental health services after disasters (Boscarino et al. 2005; Wang et al. 2008). Because crisis counseling takes place in many different contexts, the location, duration, and timing of the encounter might also influence the likelihood of referral; we labeled these *predisposing encounter characteristics.* Finally, providers' referral-making behavior may be influenced by *enabling factors,* specifically the availability of services in the local community (Stiffman et al. 2004). Because we could not measure community resources directly, we used urbanicity (central city, small city, or rural) and program type as proxies for geographic variation in service availability. "Declared" programs served areas directly hit by the hurricane, whereas "non-declared" programs served areas that absorbed evacuees.

If referrals are primarily predicted by client need, this would suggest that referrals are made on a relatively equitable and sensible basis. To the extent that referrals are predicted by predisposing factors, counselors' referral decisions are influenced by the nature of the encounter and/or client characteristics other than disaster-related loss and trauma exposure. If referrals are predicted by geography, then referrals may be limited by disparities in available local services.

Methods

Sample

Nineteen crisis counseling programs in 17 states participated in the post-Katrina cross-site evaluation. Three programs were in disaster-declared areas. The remaining 16 "undeclared programs" were implemented in areas that did

not directly experience damage from Hurricane Katrina. They worked to serve persons displaced by Hurricane Katrina, whom became known as "Katrina evacuees." Two undeclared programs were in states that had disaster declarations, but their purpose was different, and their data were kept separate. (For example, the Louisiana declaration included parishes in the southeastern sector of the state; their undeclared program served all other parishes in the state.) These programs represent all states receiving Regular Service Program (RSP) Grants after Hurricane Katrina except Iowa, from which we received too little data to include in the cross-site evaluation. We did not include data from short-term (60-day) Immediate Service Program Grants unless the state also received an RSP Grant.

The new toolkit, databases, and evaluation manual were circulated to programs at the beginning of Month 3 or about 60 days post-Katrina. Thus we used Month 3 as the first month of the evaluation interval. Because only Louisiana and Mississippi were still in operation after Month 18, we used that month as the last for the cross-site evaluation. Thus we sampled all encounter logs with a service date in Months 3–18.

Data Sources and Measures

We use data from two sources, the individual crisis counseling encounter logs and the participant surveys. All data collection tools were approved by the Office of Management and Budget in September 2005.

Individual Crisis Counseling Encounter Logs. Counselors recorded basic descriptive information about each individual encounter on a one-page form (see Norris and Belamy 2009). Crisis counseling was defined as an encounter that lasted at least 15 min and involved participant engagement or disclosure. (Very brief encounters were tallied on a separate, weekly form.) Encounter logs provided information on several *encounter characteristics* that might influence the likelihood of referral. Counselors chose one of four categories to describe the duration of the encounter: *15–29 min, 30–44 min*, *45–60 min,* or *longer than 60 min*. They also recorded whether the visit was the individual's *first*, *second*, *third*, *fourth*, or *fifth or more*. Counselors noted the location of service by checking standard categories or by writing the location in a box for "other." These data were subsequently coded into 12 categories, grouped into four larger clusters: *home*, which included temporary as well as permanent residences and homes of family members and friends; *community institutions*, which included schools and other educational settings, offices of government and social services, workplaces, places of worship, disaster relief centers, and medical centers; *public places*, such as retail centers (malls, plazas, restaurants), parks, streets, fairs, festivals, and other special events; and *phone*, *other*, *or unknown*.

Counselors checked client exposures identified during the course of their conversation that might indicate a client need for services. These included potential traumas (*rescue/recovery work*, *injury*, *threat to life*, *family member missing or dead*, *friend missing or dead*, and *witnessed death/injury*) as well as losses/disruption (s*eparated from loved ones*, *home damage*, *displacement*, *disaster unemployment*, *financial loss*, *evacuation*, *community destruction*). (For details on specific traumas and losses reported, see Table 4 in Norris and Belamy 2009).

The log also collected additional client characteristics. Basic demographic characteristics included sex, race (one or more of the census-defined categories of *American Indian/Alaskan Native*, *Asian*, *Black/African American*, *Pacific Islander/Hawaiian native*, *White*), ethnicity (*Latino/Hispanic* or *not*), and age (categories were *0–5*, *6–11*, *12–17*, *18–39*, *40–64*, *65+*). These designations were based on the counselor's observations, i.e., counselors did not ask people their sex, age, race, or ethnicity. Counselors also coded predisaster problems (*past mental health problem, physical disability*, and *past trauma*) identified during the encounter.

Urbanicity was based on counselors' recording of the zip code of service. We used a zip code database to assign encounters to county. A zip code can cross county lines but has a primary county based on the distribution of addresses. In these zip codes, the average proportion of addresses in the primary county was 0.96, suggesting that the county designation was likely to be accurate for the vast majority of logs. We used an ordinal measure of urbanicity as a proxy for local resources downloaded from www.arfsys.com and recoded so that the maximum value (6) was for *central city* and the minimum value (1) was for *non-core non-metro*.

In terms of referral practices, counselors checked whether they referred the individual to crisis counseling services, disaster relief services, mental health treatment, substance abuse treatment, or other services. Other referrals were coded extensively. Many responses could be entered into existing categories, such as other crisis counseling. Disaster relief services were expanded to include a variety of social and financial services that were commonly mentioned as other referrals (e.g., employment services, housing services, food banks). We combined referrals to mental health treatment, substance abuse treatment, and relevant other referrals (e.g., grief counseling, anger management, AA, *Access to Care*) into a new variable, psychological services.

Participant Survey. To provide an assessment of the level of potential need for psychological services that was independent of counselors' perceptions, we also examined data from a brief survey of crisis counseling participants.

The survey was distributed to all adults participating in face-to-face crisis counseling during 1 week in late April/early May 2006, and again during 1 week in August or October 2006 (timing varied by state). Surveys were returned by 3,791 individual counseling recipients, corresponding to 19% of the encounters recorded for the same days in which the surveys were conducted. This response rate accounts for both: (a) counselors not giving out the survey as instructed and (b) non-response by participants who received surveys. Additional details of the survey methodology are reported in Norris et al. (2009).

We examined the proportion of survey recipients who experienced intense reactions (defined as a score of 4 or 5 on the 5-point scale) on 7 or more items on the 11-item Sprint-E (Norris et al. 2006) an expanded version of the 8-item Short Post-Traumatic Stress Disorder Rating Interview (SPRINT) developed and validated by Connor and Davidson (2001). An analysis comparing the Sprint-E to the PTSD checklist in 165 adults seeking help in Florida after the 2004 hurricanes (Norris et al. 2008) showed that a cut-point of 7 or more intense reactions was fairly specific (79%) yet reasonably sensitive (78%) in identifying individuals with clinically significant posttraumatic stress.

Data Analysis

SPSS was used to perform all of the analyses in this study. Because encounter records are anonymous, there is no way to link data from multiple encounters with the same client. Our unit of analysis is the encounter and not the client. The frequency and percent of encounters and referrals by programs was calculated for Months 3–18 of the program. Hierarchical logistic regressions were then conducted to examine how need, predisposing, and enabling factors predicted crisis counseling recipients' likelihood of being referred for instrumental disaster assistance, additional crisis counseling, and psychological services. Potential predictors were entered in hierarchical blocks. Need variables (disaster trauma exposure, disaster loss) were entered in block 1; client predisposing factors (sex, age, race/ethnicity, past mental health problem, preexisting disability, past trauma exposure) in block 2; encounter predisposing factors (visit month, visit number, visit length, location) in block 3; and enabling factors [urbanicity and program type (declared vs. non-declared)] in block 4. The percent of total variance explained was calculated using the Nagelkere R^2 for each group of predictors and for the complete model for each of the three referral types, disaster relief or social services, crisis counseling services, or psychological services. With virtually all effects statistically significant for a sample of this size (657,000 with complete data), we will focus on effects of at least a 20% increase (OR $\geq$ 1.2) or decrease (OR $\leq$ 0.8) in the odds of referrals to various services. Finally, an analysis of the frequencies of each type of referral crisis counselors provided over 4 month intervals was conducted by comparing the percent of client survey participants who scored at or above seven on the Sprint-E (percent need) with the percent of referrals for psychological services provided during the same time period.

Results

Referral Frequencies by Program Type

Of the total 702,968 encounters, over half (58.4%, $n = 410{,}500$) resulted in referrals to disaster relief and other social services. These referrals encompassed a vast array of services, including food, clothing, shelter, employment, and housing repair, and all of the major disaster relief agencies (e.g., FEMA, Red Cross, Salvation Army), as well as local relief efforts. Case management and long-term recovery services were especially common referrals. Frequencies ranged from 56% (Mississippi) to 84% (Alabama) in declared programs and from 31% (Wisconsin) to 82% (Utah) in undeclared programs (see Table 1).

Between Months 3 and 18 postdisaster, 159,543 people (22.7%) were referred for additional crisis counseling. This included referrals for support groups, community gatherings, and follow-up visits. The overall summary statistics mask wide variability across programs (see Table 1). Percentages ranged from 6% (Alabama) to 31% (Louisiana) in declared programs and from 3% (New Jersey) to 83% (Utah) in undeclared programs.

Referrals for psychological services were uncommon (6.6%, $n = 46{,}500$). Psychological services included mental health treatment, substance abuse treatment, forms of counseling more intensive or specialized than crisis counseling (grief counseling, marital counseling), and selected self-help approaches such as Alcoholics Anonymous. In the last two time intervals (months 11–18 post-Katrina), this category also included referrals to the American Red Cross program, *Access to Care*, which provided a flexible benefit that could be used for behavioral or pharmacological treatments for mental health problems. Frequencies for psychological service referrals ranged from 4% (Mississippi) to 11% (Louisiana) in declared programs and from 3% (Wisconsin) to 21% (Arkansas, Colorado) in undeclared programs (see Table 1).

Referral for Disaster Relief and Social Services

The variables in our model predicted 8.8% of the variance (Nagelkerke R^2) in referrals for instrumental assistance (see Table 2). The strongest sets of predictors were client needs ($R^2 = 4.3\%$) and other client characteristics ($R^2 = 2.5\%$).

Table 1 Referral frequencies by program (Months 3–18)

	Encounter *n*	% Referred to		
		Disaster relief/ social services	Crisis counseling services	Psychological services
All programs	702,968	58.4	22.7	6.6
Declared programs	620,170	58.3	21.4	6.5
Alabama	9,083	83.5	6.4	5.8
Louisiana	244,354	61.2	31.3	10.7
Mississippi	366,733	55.8	15.3	3.7
Undeclared programs	82,787	59.2	32.1	7.6
Alabama	5,303	54.0	22.8	11.1
Arkansas	3,391	55.6	24.9	21.3
Colorado	2,189	53.3	23.7	20.7
Florida	8,818	55.3	41.2	8.4
Georgia	8,842	66.6	41.6	6.4
Illinois	3,815	38.6	30.1	8.1
Indiana	117	41.9	45.3	17.1
Louisiana	28,388	63.3	29.6	3.3
Maryland	1,546	39.8	49.2	1.2
Missouri	885	52.7	20.3	12.7
Nebraska	729	31.6	38.8	8.2
New Jersey	527	54.3	2.5	6.5
Pennsylvania	997	69.9	28.7	4.8
Texas	15,393	59.9	27.4	9.1
Utah	1,435	82.0	83.3	18.7
Wisconsin	412	30.8	42.0	2.9

In terms of client needs, the likelihood of referral to disaster relief and social services increased sharply as the severity of losses in the disaster increased from low to moderate (OR = 1.61) or high (OR = 2.50). Disaster-related trauma exposure did not strongly predict referral for disaster relief or social services.

Several client characteristics influenced the likelihood of referral for disaster relief. Disaster relief and social service referrals were usually made for adults rather than children (OR > 3.17); this is consistent with adults being responsible for the households' instrumental needs. These referrals were more likely for people with pre-existing physical disabilities (OR = 1.22), but less frequent for people with pre-existing mental health problems (OR = 0.73). Clients perceived to be Latino, mixed-race, or of "other" ethnicity were more likely to be referred than were Whites (OR = 1.39). Referrals did not differ by gender.

Encounter characteristics did not strongly predict disaster relief and social service referrals. The one exception was that referrals were less common in encounters lasting over 45 minutes (OR = 0.75).

Regarding enabling resources, disaster relief and social service referrals were more common in urban areas than in rural areas (OR = 1.82). However, the effect of urbanicity was smaller for these referrals than for other types.

Referrals for Additional Crisis Counseling

Our model predicted 11.5% of the variance in referrals to other crisis counseling services (see Table 2). Additional counseling referrals were primarily related to predisposing characteristics (R^2 = 4.0%), client needs (R^2 = 3.1%), and enabling resources (R^2 = 2.8%).

Clients with greater needs were more likely to get counseling referrals. People who had moderate (OR = 1.26) and high levels (OR = 1.39) of trauma exposure and high levels of loss (OR = 1.45) were more likely to be referred for additional crisis counseling.

Past history and age were additional client characteristics that influenced counseling referrals. Past trauma exposure (OR = 1.78) and pre-existing disability (OR = 1.28) increased clients' likelihood of being referred to additional crisis counseling. Adults were referred less often than children (OR < 0.79). Children were often referred to group counseling or public education events conducted at area schools.

Several encounter characteristics were associated with more frequent referrals for additional crisis counseling. Additional counseling referrals were most common 3–6 months after the disaster and much less common 15 months after the disaster (OR = 0.51; see Fig. 1). Referrals were more common (OR > 1.51) in encounters lasting a half hour or more. Longer encounters provided more opportunities for counselors to detect potential referral needs, and also indicated that clients were willing to talk and to accept emotional support. Referral to additional crisis counseling services were most common on third or later visits, which may reflect the policy adopted by some programs, including Mississippi, of referring participants to team leaders for third or later encounters. Referrals were more common in telephone contacts and in contacts in community institutions such as schools.

With regard to enabling resources, referrals to additional crisis counseling services were twice as common in urban areas as in rural areas (OR = 2.56). Counseling referrals were similar in declared and non-declared programs.

Referrals for Psychological Services

Variables in our model explained 21.3% of the variance in psychological referrals (see Table 2). Psychological

Table 2 Predictors of referrals to other crisis counseling, and psychological services: logistic regression results ($n = 656{,}824$)

	Disaster relief/social services			Crisis counseling services			Psychological services		
	R^2	OR	95% CI	R^2	OR	95% CI	R^2	OR	95% CI
Needs	0.043			0.031			0.022		
Disaster trauma (none, ref)									
Lower (1)		1.08	1.06–1.10		1.26	1.24–1.29		1.12	1.08–1.17
Higher (≥2)		1.19	1.16–1.23		1.39	1.35–1.43		1.60	1.53–1.68
Disaster loss (low, ref)									
Moderate (2–3)		1.61	1.58–1.65		1.08	1.06–1.11		1.00	0.96–1.05
High (≥4)		2.50	2.45–2.56		1.45	1.41–1.49		1.26	1.21–1.32
Predisposing client characteristics	0.025			0.016			0.050		
Past mental health problem		0.73	0.71–0.76		1.12	1.08–1.17		5.90	5.64–6.16
Pre-existing disability		1.22	1.19–1.25		1.29	1.26–1.33		1.13	1.08–1.18
Past trauma exposure		1.10	1.07–1.13		1.78	1.73–1.83		1.94	1.85–2.02
Female sex		1.09	1.08–1.11		1.03	1.01–1.04		1.00	0.97–1.03
Age (<18, ref)									
18–39		3.53	3.41–3.65		0.79	0.76–0.82		1.52	1.41–1.65
40–64		3.47	3.36–3.59		0.72	0.70–0.75		1.57	1.45–1.70
65+		3.17	3.05–3.29		0.75	0.72–0.78		1.31	1.20–1.43
Race/ethnicity (Non-Hispanic White, ref)									
African–American		1.13	1.11–1.14		1.04	1.03–1.06		0.84	0.82–0.87
Latino, mixed, other		1.39	1.35–1.44		1.06	1.02–1.10		0.89	0.84–0.95
Predisposing encounter characteristics	0.010			0.040			0.087		
Postmonth (months 3–6, ref)									
Months 7–10		1.13	1.11–1.15		0.86	0.84–0.88		0.41	0.39–0.42
Months 11–14		0.83	0.81–0.84		0.82	0.80–0.84		0.19	0.18–0.20
Months 15–18		1.10	1.07–1.12		0.51	0.49–0.52		0.20	0.19–0.21
Visit number (first visit, ref)									
Second		0.97	0.95–0.99		0.91	0.89–0.94		0.79	0.75–0.83
Third-fifth		0.90	0.88–0.92		1.28	1.25–1.31		0.75	0.72–0.79
Visit length (15–29 min, ref)									
30–44 min		1.20	1.18–1.23		1.51	1.47–1.54		1.72	1.66–1.78
45+ min		0.75	0.73–0.77		1.65	1.61–1.70		1.91	1.83–2.00
Location (home, ref)									
Community institution		0.89	0.87–0.90		1.59	1.56–1.62		1.22	1.19–1.26
Public place		0.98	0.95–1.00		1.18	1.14–1.21		0.92	0.86–0.99
Phone, other		0.97	0.95–1.00		1.47	1.42–1.51		0.91	0.86–0.96
Enabling resources	0.010			0.028			0.054		
Undeclared program		1.03	1.00–1.05		1.09	1.06–1.12		0.79	0.75–0.83
Urbanicity (rural, ref)									
Small-medium city		1.25	1.23–1.27		1.21	1.18–1.23		1.88	1.80–1.97
Central city or fringe		1.82	1.78–1.86		2.56	2.49–2.61		6.17	5.89–6.46
Complete model	0.088			0.115			0.213		

Note. All effects were significant at $P < 0.001$ except for those of program type-undeclared, location-public place, and location-phone on disaster relief referrals and location-public place, sex-female, and loss-moderate on psychological referrals

referrals were primarily predicted by encounter characteristics ($R^2 = 8.7\%$), and secondarily by enabling resources ($R^2 = 5.4\%$) and client characteristics ($R^2 = 5.0\%$).

Client needs were the least predictive factors ($R^2 = 2.2\%$) in psychological referrals. Such referrals were more common for people with high levels of trauma

exposure (OR = 1.60) and high levels of disaster loss (OR = 1.26).

Important predisposing client characteristics were past history and age. Odds of a psychological referral were six times higher (OR = 5.99) for people who reported past mental health problems, and two times higher (OR = 1.94) for people who discussed prior trauma exposure. Adults were more likely than children (OR > 1.31) to be referred for psychological services.

Encounter characteristics strongly influenced the likelihood of referral for psychological services. As with referrals for counseling, referrals for psychological services were most common in months 3–6 after the hurricane, and declined sharply (OR < 0.20) after 11 months (see Fig. 1). There was no detectable increase in psychological treatment referrals during months 11–18, after the *Access to Care* initiative to fund psychological treatment was launched. Psychological referrals were more common in visits lasting over 30 minutes (OR > 1.72), and in visits located in community institutions (OR = 1.22). Psychological referrals were less common (OR < 0.79) on repeat visits than on initial visits. This finding appears counter to program guidelines which suggest increased emphasis on referrals to treatment among persons who have three or more individual counseling encounters.

Enabling resources (urbanicity and program type) were more predictive of psychological referrals than other types of referrals (Nagelkerke $R^2 = 5.4\%$). The odds of receiving a psychological referral were six times higher (OR = 6.17) in urban areas than in rural areas. Counselors in undeclared programs were less likely (OR = 0.79) to refer participants to psychological services when other variables were controlled.

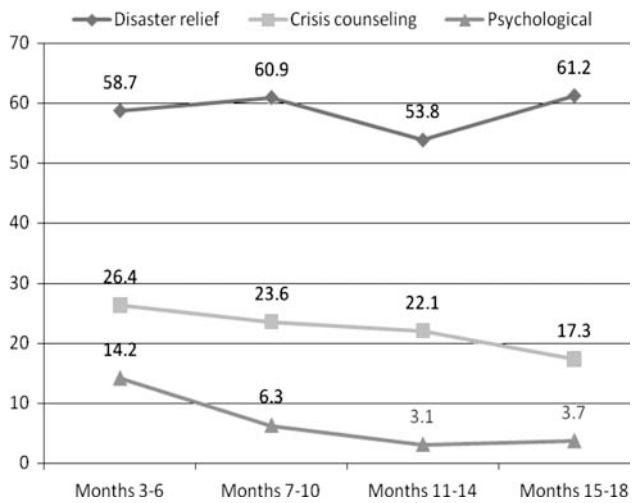

Fig. 1 Frequencies of referrals to disaster relief, additional crisis counseling, and psychological services over four 4-month intervals post-Katrina

Participant Survey Results (% Need) versus Encounter Log Results (% Referred)

There is no "gold standard" by which to determine that referrals to psychological services were at appropriate levels as opposed to too high or too low. However, some guidance is provided by the participant survey results. In this survey, 38.5% of the 2,136 participants from March–April 2006 and 35.6% of the 1,982 respondents from August–October 2006 endorsed 7 or more intense reactions on the Sprint-E, a level of severity that is strongly indicative of clinically significant distress (Norris et al. 2008). These data point to only a slight decrease in prevalence of mental health treatment need over time, χ^2 (1, N = 4,118) = 3.74, $P = 0.053$. The proportions of counseling clients referred for psychological treatment around these two time periods were only 6.3 and 3.1%, respectively, indicating a dramatic gap between referrals and potential need for psychological treatment.

Discussion

In this study, data from nearly 703,000 individual counseling encounter logs completed by workers in 19 post-Katrina crisis counseling programs were analyzed to draw conclusions about factors that influence crisis counselors' decisions to make referrals for disaster relief, additional crisis counseling, and psychological services.

The determinants of referral for disaster relief services were fairly straightforward. The strongest predictors were need (disaster-related losses), age (adults rather than children), urbanicity, and prior physical disability (potentially indicating greater need for tangible assistance). Individuals with preexisting mental illness were less likely to receive referrals for disaster relief, suggesting that counselors may have not fully responded to their instrumental rather than psychological needs. Referrals for disaster aid were relatively consistent over time.

Determinants of referrals for additional counseling and for psychological services were more complex. We had no direct assessment of clients' functioning (anonymous client survey data could not be linked with encounter data), so we inferred clients' needs from their reports of disaster loss and trauma exposure. These variables explained 2–3% of the variance in referrals, which is consistent with findings from Project Liberty that found that disaster-related loss was a predictor for referrals to mental health services (Covell et al. 2006).

However, preexisting mental illness was an even stronger predictor than Katrina-related exposure or losses in referrals for psychological services. Psychological referrals are appropriate for clients with chronic mental illness,

because crisis counseling is only intended to help clients return to predisaster functioning, not to address preexisting needs (Gibson et al. 2006). Yet psychological treatment may also be warranted for people who have severe and persistent postdisaster reactions. Up to a third of respondents to the postdisaster survey screened positive for such symptoms a year after Hurricane Katrina. One factor limiting psychological referrals for people without preexisting disorders may be limited access to specialized treatments for postdisaster distress (e.g., Hamblen et al. 2009).

Consistent with the results from Project Liberty (Covell et al. 2006), we found only small differences in referral (help-offering) by clients' race, or gender, or age (other than the distinction between adults and children). Non-Whites received significantly fewer referrals than Whites for psychological services, but the differences were small (OR = 0.84 and 0.89), especially compared to other research (e.g., Wang et al. 2008). Even so, lower referral of non-Whites may reflect biases by referrers, client preferences for peer or non-traditional help (e.g., Ford et al. 2006), or more limited access to culturally-appropriate mental health providers. The lack of a strong gender difference in likelihood of mental health or counseling referrals is also striking in contrast with other literature on help-seeking (Wang et al. 2008). It suggests that counselors were not biased to see women and girls as more likely to require help or more accepting of referrals.

Another key finding was that encounters in urban settings were far more likely to yield referrals of all types, but especially referrals to psychological services. In this population, urban encounters included not only New Orleans and Mobile in the declared areas but several large cities (e.g., Chicago, Atlanta, Philadelphia) where evacuees lived. If services were limited in some areas, workers may have been unable to offer referrals of any kind. Future research should more directly assess the local availability of community services, and counselors' awareness of these services to see how these influence referral practices (Stiffman et al. 2001, 2004).

One of the most intriguing findings was the decline in counseling and psychological referrals over time. This could reflect changes in need: in typical disasters, most people who experience acute distress remit within several months (Norris et al. 2002). However, the trajectory of recovery after Hurricane Katrina was far from typical. An epidemiological survey conducted after Hurricane Katrina found the prevalence of PTSD, anxiety disorders, and suicidality 17–19 months after the hurricane was no lower than it had been at 5–7 months (Kessler et al. 2008). Remission of client distress therefore cannot explain the decline in additional counseling and treatment referrals. Another potential explanation for declining referrals could be that local service providers became overwhelmed by cumulative demands for services and stopped accepting new referrals (loss of an enabling factor). However, referrals to psychological treatment did not increase after the *Access to Care* initiative was launched, so it is unclear how changes in the availability of services influenced referral rates over time.

A third potential explanation for declining counseling and psychological treatment referrals regards counselors' own reactions to encountering people in distress. Prior studies have investigated the effects of disaster relief work on providers' mental health (Creamer and Liddle 2005; Lesaca 1996; Shepherd and Hodgkinson 1990), but not on providers' decision-making. Early in the program, counselors who encountered distressed clients may have felt an urgent need to "do something" and were therefore predisposed to refer clients to counseling or treatment. Once counselors became more acclimated to encountering people in distress, they may have become more selective in making additional counseling and treatment referrals. Lastly, it is possible that as time went on, more individuals with severe distress may already have attained mental health services. Continuing mental health referrals might then reflect identification of the newly emerging cases, which were much less prevalent than the initially presenting cases.

In conclusion, referrals are an important yet underexplored aspect of postdisaster crisis counseling programs. Provision of referrals was only partly driven by client needs; clients' prior history, the context of the encounter, stage of disaster recovery, and geography played roles as well. Psychological treatment referrals were uncommon and primarily focused on clients with preexisting mental illness. There were significant urban-rural disparities in referrals, suggesting that rural areas may have less availability of services.

More research is needed on professional and lay crisis counselor's gatekeeper role (Stiffman et al. 2004) in the referral process after disasters. This includes exploring crisis counselors' ability to detect client needs, their awareness of community resources, their ability to match client needs to local services, and their role in fostering client acceptance of referrals. Illuminating outreach workers' role in mediating referrals can inform not only crisis counseling, but also mental health outreach programs serving other populations, such as elders (Abraham et al. 1993), homeless veterans (Kasprow et al. 2000; Lam and Rosenheck 1999; McGuire et al. 2003), and individuals with HIV (Naar-King et al. 2007).

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References

Abraham, I. L., Buckwalter, K. C., Snustad, D. G., Smullen, D. E., Thompson-Heisterman, A. A., Neese, J. B., et al. (1993). Psychogeriatric outreach to rural families: The Iowa and Virginia models. *International Psychogeriatrics, 5*, 203–211.

Anderson, R. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36*, 1–10.

Boscarino, J. A., Adams, R. E., Stuber, J., & Galea, S. (2005). Disparities in mental health treatment following the World Trade Center Disaster: Implications for mental health care and health services research. *Journal of Traumatic Stress, 18*, 287–297.

Caplan, G. (1964). *Principles of preventive psychiatry*. New York: Basic Books.

Centers for Disease Control and Prevention. (2006). Assessment of health-related needs after Hurricanes Katrina and Rita—Orleans and Jefferson Parishes, New Orleans area, Louisiana, October 17–22, 2005. *MMWR. Morbidity and Mortality Weekly Report*, 55, 38–41.

Connor, K. M., & Davidson, J. R. (2001). SPRINT: A brief global assessment of post-traumatic stress disorder. *International Clinical Psychopharmacology, 16*, 279–284.

Covell, N. H., Essock, S. M., Felton, C. J., & Donahue, S. A. (2006). Characteristics of Project Liberty clients that predicted referrals to intensive mental health services. *Psychiatric Services, 57*, 1313–1315.

Creamer, T. L., & Liddle, B. J. (2005). Secondary traumatic stress among disaster mental health workers responding to the September 11 attacks. *Journal of Traumatic Stress, 18*, 89–96.

Flynn, B. W. (1994). Mental health services in large scale disasters: An overview of the Crisis Counseling Program. *NCP Clinical Quarterly, 4*, 1–4.

Ford, J. D., Adams, M. L., & Dailey, W. F. (2006). Factors associated with receiving help and risk factors for disaster-related distress among Connecticut adults 5–15 months after the September 11th terrorist incidents. *Social Psychiatry and Psychiatric Epidemiology, 41*, 261–270.

Galea, S., Brewin, C. R., Gruber, M., Jones, R. T., King, D. W., King, L. A., et al. (2007). Exposure to hurricane-related stressors and mental illness after Hurricane Katrina. *Archives of General Psychiatry, 64*, 1427–1434.

Gibson, L. E., Ruzek, J. I., Naturale, A. J., Watson, P. J., Bryant, R. A., Rynearson, T., et al. (2006). Interventions for individuals after mass violence and disaster: Recommendations from the roundtable on screening and assessment, outreach, and intervention for mental health and substance abuse needs following disasters and mass violence. *Journal of Trauma Practice, 5*, 1–28.

Hamblen, J. L., Norris, F. H., Pietruszkiewicz, S., Gibson, L. E., Naturale, A. J., & Louis, C. (2009). Cognitive behavioral therapy for postdisaster distress: A community based treatment program for survivors of Hurricane Katrina. *Administration and Policy in Mental Health and Mental Health Services Research*. doi:10.1007/s10488-009-0213-3.

Jayasinghe, N., Giosan, C., Difede, J., Spielman, L., & Robin, L. (2006). Predictors of responses to psychotherapy referral of WTC utility disaster workers. *Journal of Traumatic Stress, 19*, 307–312.

Kasprow, W. J., Rosenheck, R. A., Frisman, L., & DiLella, D. (2000). Referral and housing processes in a long-term supported housing program for homeless veterans. *Psychiatric Services, 51*, 1017–1023.

Kessler, R. C., Galea, S., Gruber, M. J., Sampson, N. A., Ursano, R. J., & Wessely, S. (2008). Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry, 13*, 374–384.

Lam, J. A., & Rosenheck, R. (1999). Street outreach for homeless persons with serious mental illness: Is it effective? *Medical Care, 37*, 894–907.

Lesaca, T. (1996). Symptoms of stress disorder and depression among trauma counselors after an airline disaster. *Psychiatric Services, 47*, 424–426.

McGuire, J., Rosenheck, R. A., & Kasprow, W. J. (2003). Health status, service use, and costs among veterans receiving outreach services in jail or community settings. *Psychiatric Services, 54*, 201–207.

Naar-King, S., Bradford, J., Coleman, S., Green-Jones, M., Cabral, H., & Tobias, C. (2007). Retention in care of persons newly diagnosed with HIV: Outcomes of the outreach initiative. *AIDS PatientCare and STDs, 21*(Suppl 1), S40–S48.

Norris, F. H., & Belamy, N. (2009). Evaluation of a national effort to reach Hurricane Katrina survivors and evacuees: The Crisis Counseling Assistance and Training Program. *Administration and Policy in Mental Health and Mental Health Services Research*. doi:10.1007/s10488-009-0217-z.

Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. an empirical review of the empirical literature, 1981–2001. *Psychiatry, 65*, 207–239.

Norris, F. H., Donahue, S. A., Felton, C. J., Watson, P. J., Hamblen, J. L., & Marshall, R. D. (2006). A psychometric analysis of Project Liberty's adult enhanced services referral tool. *Psychiatric Services, 57*, 1328–1334.

Norris, F. H., Hamblen, J. L., Brown, L. M., & Schinka, J. A. (2008). Validation of the short post-traumatic stress disorder rating interview (Expanded Version, Sprint-E) as a measure of postdisaster distress and treatment need. *American Journal of Disaster Medicine, 3*, 201–212.

Norris, F. H., Hamblen, J. L., & Rosen, C. S. (2009). Service characteristics and counseling outcomes: Lessons from a cross-site evaluation of crisis counseling after Hurricanes Katrina, Rita, and Wilma. *Administration and Policy in Mental Health and Mental Health Services Research*. doi:10.1007/s10488-009-0215-1.

Norris, F. H., & Rosen, C. S. (2009). Innovations in disaster mental health services and evaluation: National, state, and local responses to Hurricane Katrina. *Administration and Policy in Mental Health and Mental Health Services Research*. doi:10.1007/s10488-009-0218-y.

Shepherd, M., & Hodgkinson, P. E. (1990). The hidden victims of disaster: Helper stress. *Stress Medicine, 6*, 29–35.

Smedlye, B. D., Stith, A. Y., & Nelson, A. R. (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: The National Academies Press.

Stiffman, A. R., Striley, C., Horvath, V. E., Hadley-Ives, E., Polgar, M., Elze, D., et al. (2001). Organizational context and provider perception as determinants of mental health service use. *Journal of Behavioral Health Services Research, 28*, 188–204.

Stiffman, A. R., Pescosolido, B., & Cabassa, L. J. (2004). Building a model to understand youth service access: The gateway provider model. *Mental Health Services Research, 6*, 189–198.

Wang, P. S., Gruber, M. J., Powers, R. E., Schoenbaum, M., Speier, A. H., Wells, K. B., et al. (2008). Disruption of existing mental health treatments and failure to initiate new treatment after Hurricane Katrina. *American Journal of Psychiatry, 165*, 34–41.